

**Seattle Water Supply System  
Regional 1% Water  
Conservation Program**

*Saving Water Partnership  
2006 Annual Report*

August 2007



# Table of Contents

## **Saving Water Partnership Regional 1% Water Conservation Program 2006 Annual Report**

|   |           |
|---|-----------|
| <b>2006 Water Conservation Year in Review .....</b>                         | <b>1</b>  |
| <b>2006 Detailed Program Accomplishments .....</b>                          | <b>10</b> |
| Commercial, Industrial and Institutional Highlights .....                   | 10        |
| Residential Indoor Highlights .....   | 11        |
| Residential and Commercial Landscape Highlights .....                       | 12        |
| General Customer Outreach and Messaging .....                               | 14        |
| Youth Education.....  | 15        |
| Evaluation and Monitoring .....   | 16        |
| <b>Charts and Tables</b>  |           |
| <b>Charts</b>   |           |
| Chart 1: Growth in Population and Water Consumption.....                    | 1         |
| Chart 2: Total and Billed Annual Average Consumption per Capita.....        | 2         |
| Chart 3: Cumulative Water Savings Since 1999.....                           | 8         |
| <b>Tables</b>   |           |
| Table 1: 2006 Conservation Measures and Strategies .....                    | 5         |
| Table 2: New Long-Term Water Savings Achieved in 2006 and Program Cost..... | 6         |
| Table 3: Regional 1% Program Cumulative Savings.....                        | 9         |
| Table 4: Commercial Hardware Savings.....                                   | 10        |
| Table 5: 2006 Residential Hardware Savings.....                             | 11        |
| Table 6: Landscape Customer Outreach.....                                   | 12        |
| Table 7: Landscape Rebates .....  | 12        |
| Table 8: 2006 Youth Education Performance .....                             | 15        |



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# 2006 Water Conservation Year in Review

## Summary

Excellent progress on regional water conservation continued in 2006, with completion of the sixth year of the 1% Program (2000-2010). Regional per capita use is continuing to decline when normalized for variation in weather conditions. The Program continues to be close to target to meet its 2010 water saving goal.

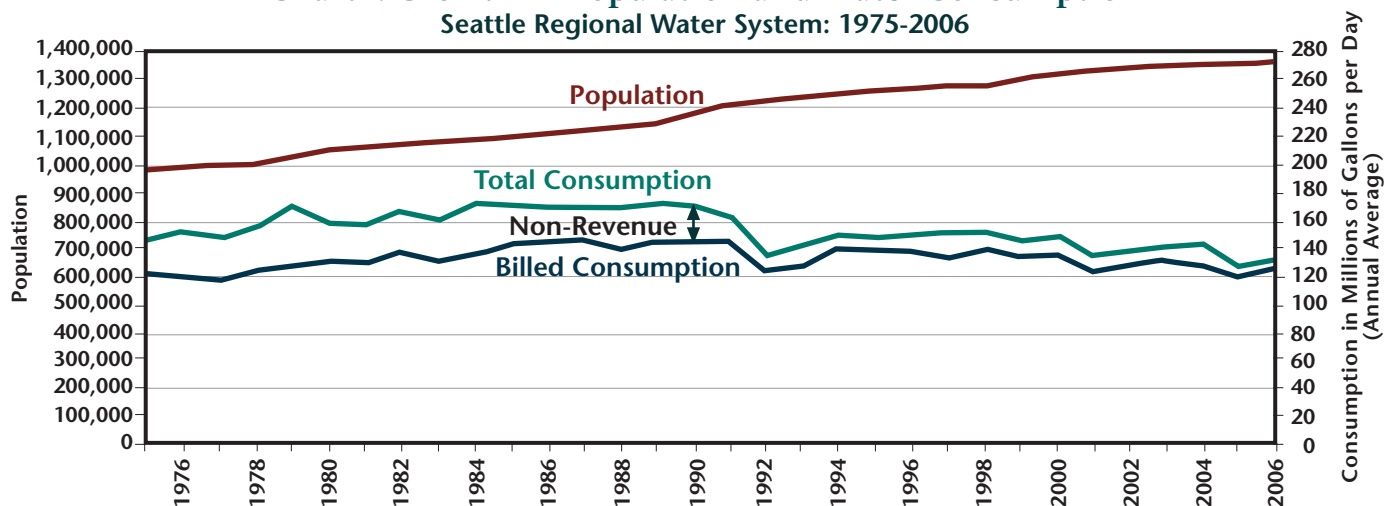
Charts 1 and 2 show how water consumption patterns have changed over time. For most of the region's history, water consumption has increased along with its population. However, that link was broken around 1990 when annual consumption reached its highest levels of about 170 million gallons per day (mgd). Since then, water consumption has steadily declined due to conservation despite continued population growth. Annual consumption now averages 130 mgd. That's less water than the region was using 40 years ago.

What happened? A new conservation-oriented rate structure was introduced in 1989 and both water and sewer rates increased rapidly over the decade. A drought in 1992 led to mandatory water use restric-

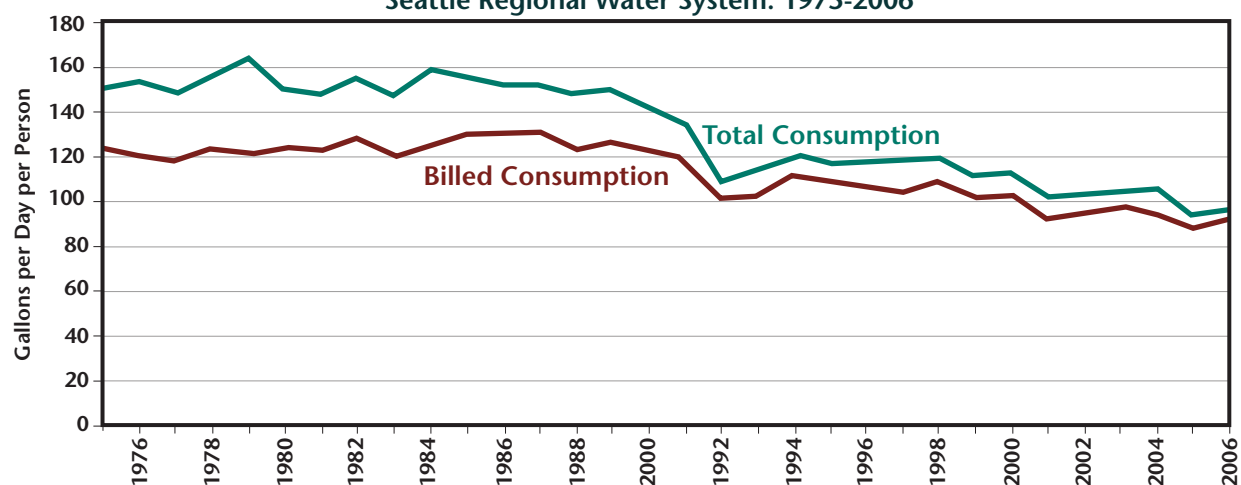
tions and a sharp (but temporary) drop in summertime water consumption. At the same time, Seattle launched an aggressive conservation program while drastically reducing the amount of water that was lost through in-city reservoir leaks and overflowing. In 1993, a new state plumbing code went into effect that established efficiency standards for all new toilets, showerheads and faucet aerators. Finally, a new wave of conservation programs - the 1% Program - was begun in the year 2000 with the goal of reducing per person water consumption by 1% every year for 10 years. As a result, water consumption has steadily declined even as the population has continued to grow. Since 1990, Seattle system water consumption has declined by 40 mgd or 24% while population has increased 11%. On a per person basis, water consumption has shrunk by one third from 150 to 100 gallons per day. Chart 3: Cumulative Water Savings (on page 8) shows the components of this decline in consumption since 1999.

The focus of this 2006 Annual Report is the 1% Program. Cumulative savings since the program's inception are shown in Table 3 on page 9. ♦

**Chart1: Growth in Population and Water Consumption**  
Seattle Regional Water System: 1975-2006



**Chart 2: Total and Billed Annual Average Consumption per Capita  
Seattle Regional Water System: 1975-2006**



## Regional 1% Program Goal and Objectives

The Regional 1% Water Conservation Program (1% Program) is sponsored by the Saving Water Partnership (SWP). The SWP includes the City of Seattle and its retail service area (population 628,000) and a group of 17 utilities purchasing wholesale water from the City of Seattle (population 416,000). Five utilities that were part of the program from 2000-2003 left the 1% Program in 2004 when the Cascade Water Alliance (Cascade) was formed and are pursuing conservation on their own. Accordingly, the 1% Program savings targets have been reduced proportionately for the remaining population served. Seattle Public Utilities administers the 1% Program in collaboration with participating wholesale utility customers, under terms of long-term water supply contracts.

The long-term goal of the 1% Program, adopted in 1999, is to keep total water demand at the end of 2010 the same as in 2000, despite growth in population and economic activity. To achieve this goal based on the forecasted growth rates at the beginning of the 1% Program, three specific target objectives were developed to track program achievements:

- Reduce peak season per capita average consumption 1% per year from 2000 to 2010;

- Achieve total programmatic conservation savings (as adjusted following the departure of Cascade utilities) of 11 million gallons per day (mgd) annual average savings (14.5 mgd peak season) in the ten years from 2000 through 2010;
- Achieve annual programmatic conservation savings targets. The target for 2006 was 1.1 mgd annual average savings.

The 1% goal was selected to achieve a number of objectives, including:

- **Keeping up with demand.** If each person and business in the region becomes 10% more water efficient over the next ten years, the region will save approximately 11.0 million gallons of drinking water per day in annual average gallons (14.5 MGD in the peak season).
- **Resource stewardship and endangered species protection.** Leveling out the impact of growth on the region's water supplies means preserving more water for salmon, other aquatic life, recreation, water quality, and other important purposes. The federal Endangered Species Act (ESA) listing of the Chinook salmon has added emphasis for withdrawals that may have impacts on the Chinook.

- **Cost-effective extension of existing supplies.** The measures identified in the 1% Program are less costly on a per unit basis than developing most traditional new sources of water supply. This benefits customers by keeping rates lower than they would be if a new source of supply were added to the system to meet demand in lieu of reducing it through conservation.
- **Customer service.** Conservation provides a direct benefit to participating customers by giving them more control over their individual water bills. Participation in conservation measures has other benefits including lower wastewater, electric, and gas utility bills, convenience, labor savings, and in some cases like clothes washing, improved performance.
- **Reliability.** Developing traditional new water supply sources has lengthy regulatory approval processes. Conser-

vation programs can be implemented quickly by utilities without permits, approvals, or revisions to comprehensive plans. Furthermore, because much of the programmatic savings are technology based, savings can be obtained reliably.

The regional program began in 2000. The first two years were ramp-up years for program measures, staffing, and funding. A Ten Year Water Conservation Program Plan (Seattle Public Utilities, 2002) was completed in 2002 detailing program budgets, savings targets and implementation strategies through 2010. SPU and its wholesale customers remain committed to achieving the 11.0 mgd annual average savings goal in 2010. ♦

## 2006 Savings Target

The annual demand reduction target for 2006 was 1.1 million gallons per day (mgd). In 2005, to be consistent with reporting of code, price, and non-revenue water savings, and to mesh with ongoing water system planning, an annual average savings target for the 1% program was adopted and has replaced peak savings as the tracking measure.

### Conservation Measure Selection and Modification

In 1998, SPU completed a detailed econometric analysis of water conservation potential, the *Conservation Potential Assessment* (CPA, Seattle Public Utilities, 1998). The CPA provides a rigorous analysis of the cost, volume, and reliability of conservation savings available within Seattle's wholesale and direct service areas. The CPA is an analytical tool used to help direct customer demand reduction programs towards the most cost-effective conservation opportunities. The CPA was instrumental in shaping the 1% Program in terms of selecting measures to meet the goal and budget to support the effort.

The 1998 CPA was updated in 2006 (CPA, Seattle Public Utilities, 2006). In addition to calculating water savings and levelized costs for 135 conservation mea-

asures, the 2006 CPA incorporates efficiencies expected from the State Building Code relative to plumbing fixtures. The 2006 CPA calculates other benefits obtained by conservation measures including savings from reductions in demand for electricity, storm water and wastewater. It also ranks conservation measures according to the marginal cost of achieving a unit of water savings.

The 2006 CPA analysis was used to:

- Incorporate updated CPA savings estimates into the regional 1% Water Conservation Program (1% Program) to fine-tune the implementation measures for the 2007-2010 portion of the 1% Conservation Goal;
- Package groups of measures for the Conservation Drivers Analysis to evaluate future, post-2010 1% Program water conservation alternatives of varying intensity; and
- Analyze "Technical Potential" packages for the SPU Water Supply Planning Model.

The 2006 CPA provided input into a new water supply planning model that evaluates the costs of new water supply alternatives, including additional conservation programs. The new model uses a "value



score” that captures the non-monetary benefits of water supply alternatives.

#### Conservation After the 1% Program

After a review of the 2006 CPA analysis and stakeholder-identified “drivers” of water conservation, SPU and its wholesale customers selected a conservation goal of 15 mgd of average annual savings (20-year cumulative total) from 2011-2030. The “2011-2030 Regional Baseline Conservation Program” will begin after the

conclusion of the current “Regional 1% Conservation Program”, which ends in 2010. Looking forward, the 2011-2030 goal is viewed as low-cost insurance for meeting potential future challenges from climate change, as a low-cost way to manage and protect water resources, and as a low-cost way for customers to manage their bills. If more water is needed in the future, additional conservation would be considered as a supply option. ♦

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## 2006 Program Measures and Strategies

Conservation savings have resulted from improvements in water use efficiency in residential, commercial, industrial, institutional and landscape customer sectors. The 1% Program is implementing conservation programs to improve customer water use efficiency through strategies that integrate information, education, social marketing, incentives, codes and regulations. Table 1 provides details on the types of measures and the strategies used in 2006.

The 2006 1% Program fixture and equipment rebate programs for residential and commercial customers expanded upon 2005 efforts and customer contacts. Rebates were re-tooled in some instances, new incen-

tives were introduced, and new utility partnerships were formed to leverage resources and increase services to customers. 1% Program outreach and technical assistance was expanded for large and small commercial customers, and for vendors and contractors.

Marketing strategies to increase rebates and long-term conservation behaviors focused on target recruitment of different types of customers for specific conservation programs. These strategies employed mass media, direct mailings, new program materials, new web and hotline resources, seminars and workshops, agency and trade association partnerships and a host of targeted promotions. ♦



The Sea Tac Valu Inn in Highline Water District replaced toilets, showerheads and faucet aerators.



Tom Quigley from Olympic Nursery shows residents proper pruning techniques at the 2006 Spring Garden Fair sponsored by the SWP, City of Bothell, Northshore Utility District, and Woodinville Water District.

**Table 1: 2006 Conservation Measures and Strategies**

| Types of Measures  | Types of Strategies   |
|--|---|
| <b>RESIDENTIAL INDOOR</b>  |   |
| <ul style="list-style-type: none"> <li>■ Replace washing machines</li> <li>■ Replace toilets &amp; faucets (single family &amp; multifamily)</li> <li>■ Fix leaks</li> <li>■ Change behaviors (flushes, faucet use, shower time, full loads)</li> </ul>  | <ul style="list-style-type: none"> <li>■ WashWise rebates</li> <li>■ Multifamily toilet rebates</li> <li>■ Building owner and operator targeting</li> <li>■ Behavior messaging</li> <li>■ Collaboration with energy utilities</li> <li>■ Program recruiting through media, mailing</li> <li>■ Promotion of FlushStar® toilet performance</li> </ul>   |
| <b>RESIDENTIAL LANDSCAPE</b>   |   |
| <ul style="list-style-type: none"> <li>■ Reduce peak water use <ul style="list-style-type: none"> <li>■ Irrigation system performance</li> <li>■ Landscape watering behaviors</li> <li>■ Practices that affect watering (e.g. mulch, soil prep and plant selection)</li> </ul> </li> </ul>   | <ul style="list-style-type: none"> <li>■ Irrigation system efficiency rebates</li> <li>■ Aesthetic-oriented media campaign</li> <li>■ Regional sales events</li> <li>■ Retailer partnerships (nurseries &amp; home &amp; garden centers)</li> <li>■ Technical information</li> <li>■ High peak users targeting</li> </ul>   |
| <b>COMMERCIAL PROCESS/DOMESTIC</b>   |   |
| <ul style="list-style-type: none"> <li>■ Upgrade toilets and other domestic water use fixtures</li> <li>■ Upgrade efficiency of equipment for cooling, process other industrial uses</li> <li>■ Improve cooling performance</li> <li>■ Upgrade efficiency of specific water consuming medical and lab equipment</li> <li>■ Outreach to ethnic businesses</li> <li>■ New construction incentives</li> </ul> | <ul style="list-style-type: none"> <li>■ Small and large business targeting</li> <li>■ Restaurant targeting - new efficient food steamer rebate</li> <li>■ Outreach to business groups through Resource Venture</li> <li>■ Technical assistance, assessments, workshops</li> <li>■ Financial incentives (custom projects &amp; standard rebates)</li> <li>■ Bonus incentives to increase specific measure participation</li> <li>■ Targeted promotion through vendors, trade groups, agencies</li> <li>■ End-use metering wherever possible to build cost-effective conservation recommendations</li> </ul> |
| <b>COMMERCIAL LANDSCAPE</b>  |   |
| <ul style="list-style-type: none"> <li>■ Improve watering efficiency <ul style="list-style-type: none"> <li>■ Upgrade irrigation equipment (controls, rain sensors, drip)</li> <li>■ Improve scheduling &amp; maintenance</li> </ul> </li> </ul>   | <ul style="list-style-type: none"> <li>■ Assessments, workshops and technical assistance</li> <li>■ Financial incentives (custom projects and set rebates)</li> <li>■ Targeted recruiting and promotion</li> <li>■ Market transformation by establishing and building vendor and contractor relationships</li> </ul>  |
| <b>SUPPORTING ELEMENTS</b>   |   |
| Types of Measures  | Types of Strategies   |
| <b>YOUTH EDUCATION</b> (Supports savings in other sectors)   |   |
| <ul style="list-style-type: none"> <li>■ Build conservation awareness of residential measures</li> </ul>   | <ul style="list-style-type: none"> <li>■ Sponsorships of water festivals and events</li> <li>■ Educator resources</li> <li>■ Classroom and take-home materials and devices</li> <li>■ Educational TV PSA for kids</li> <li>■ Web-based interactive activities</li> </ul>  |
| <b>OVERALL MESSAGING</b> (Supports savings in other sectors)   |   |
| <ul style="list-style-type: none"> <li>■ Conservation awareness supporting recruitment of residential and commercial customers</li> </ul>  | <ul style="list-style-type: none"> <li>■ Targeted marketing</li> <li>■ Collaboration with Puget Sound regional water utilities</li> <li>■ Festivals</li> </ul>  |
| <b>PROGRAM EVALUATION</b> (Supports savings in other sectors)  |   |
| <ul style="list-style-type: none"> <li>■ Evaluate measure savings</li> <li>■ Evaluate program effectiveness</li> </ul>   | <ul style="list-style-type: none"> <li>■ Conservation Potential Assessment</li> <li>■ Annual reports</li> <li>■ Customer baseline surveys of attitudes and behaviors</li> </ul>   |

## 2006 Program Performance

Total water consumption in 2006 was 131 mgd, up from 127 mgd in 2005. Much of this apparent increase was due to variation in summer weather. While rainfall and temperature in the summer of 2005 were average, 2006 was one of the hotter, drier summers on record. Only a quarter inch of rain fell during a 3 month stretch in the middle of the summer - just 10% of normal - with average temperatures almost 3 degrees higher than normal. Adjusted for summer weather, 2006 billed consumption was actually about 1.7 mgd less than it was in 2005

Cumulative long-term<sup>1</sup> water savings remain on track to reach the Program savings goal of 11.0 mgd (cumulative

total of average annual savings) by 2010. The goal of reducing per capita consumption by 1% -- and thereby keeping total demand flat -- is being met. 1% Program savings of 0.93 mgd are estimated to have been achieved in 2006, slightly below the annual target of 1.1 mgd. Total other long-term savings for 2006 (that can be attributed to the Seattle-only low income and accelerated programs, increased water rates, the plumbing code, and system operation savings) are estimated at 2.44 mgd. Table 2 shows the various components of the estimated long-term savings achieved in 2006, along with expenditures for the 1% Program:

**Table 2: New Long-Term Water Savings<sup>1</sup> Achieved in 2006 and Program Cost**

|   | Annual Average Million<br>Gallons Per Day | Program Cost in<br>Thousands of \$ |
|---|---|------------------------------------|
| <b>Regional 1% Conservation Program</b>               |   |                                    |
| Hardware Incentives                                   |   |                                    |
| Residential Indoor                                    | 0.21                                      | \$ 1,196                           |
| Landscape   | 0.04                                      | \$ 400                             |
| Commercial Non-Landscape                              | 0.28                                      | \$ 981                             |
| Total Hardware  | 0.53                                      | \$ 2,577                           |
| Behavior  | 0.40                                      | \$ 542                             |
| <b>Total 2006 1% Conservation Program</b>             | <b>0.93</b>                               | <b>\$ 3,119</b>                    |
| <b>Other Long-Term Savings</b>                        |   |                                    |
| Seattle Ordinance #120532 (I-63 Settlement Ordinance) | 0.05                                      |                                    |
| Price Impact <sup>2</sup>                             | 0.23                                      |                                    |
| Plumbing Code <sup>3</sup>                            | 0.74                                      |                                    |
| System Operation Savings <sup>4</sup>                 | 1.42                                      |                                    |
| <b>Total Other Savings for 2006</b>                   | <b>2.44</b>                               |                                    |
| <b>Total Savings for 2006<sup>5</sup></b>             | <b>3.37</b>                               |                                    |

<sup>1</sup> As opposed to short-term transitory savings such as those associated with water curtailment events or economic downturns.

<sup>2</sup> The impact of water and sewer price increases on water consumption was estimated based on assumptions used in the SPU water demand forecast model. The price impact was adjusted to reflect the overlap between price effects and other forms of conservation (in order to avoid double counting of conservation savings).

<sup>3</sup> A considerable effort continues to be made to revise local, state, and national water efficiency codes and standards to obtain future savings. The cost for this ongoing effort is included as hardware costs, since they all relate to hardware change out.

<sup>4</sup> System operation use further declined in 2006 as metering was installed on some of the remaining open reservoirs to better control overflowing. Two more reservoirs were taken out of service prior to being replaced with covered reservoirs.

<sup>5</sup> Analysis of total consumption indicates that total savings for 2006 may exceed our conservative estimates of the four components analyzed in this table: conservation programs, price, code and system operation. Total savings may be refined in future Annual Reports, as additional analysis and research are conducted.



**Hardware Incentive Savings** include new fixtures and equipment upgrades that were supported with program incentives, as well as accelerated fixtures (beyond rates and code) that were upgraded without rebates. Based on program records, these savings are estimated to be 0.53 mgd annual average in 2006.

**Price and Behavioral Savings** include permanent conservation achieved from changes in customer water-using behaviors. Estimated to be 0.63 mgd annual average in 2006, these savings are difficult to separate from each other since price has a strong influence in stimulating customers to change water using behaviors. Price savings came from using the price elasticity and overlap parameters calculated from SPU's water demand forecast model.

**Plumbing Code Savings** include water saved by customers as they remodel plumbing fixtures to meet more stringent building code efficiency standards (1.6 gallons per flush for toilets, 1.0 gallons per flush for urinals, 2.5 gallons per minute for showerheads and aerators). The 0.7 mgd code savings shown would happen with or without a regional conservation program due to ongoing new construction and remodeling in the service area. Fixture changes that might have occurred as a result of price or education about more efficient plumbing fixtures are not part of this total, but instead are credited to price or 1% Program savings. In 2005, refinements in the method of calculating code savings during the process of updating the CPA resulted in a decrease in these cumulative savings compared to the figure reported in the 2004 Annual Report. The 2006 regional benchmark customer survey affirmed this revised method.

**Seattle-Only Low Income and Seattle-Only Accelerated** savings are not considered part of the 1% Regional

Program. Rather, they are savings funded solely by Seattle and obtained within the Seattle direct service area in addition to (on top of) the 1% savings. The Mayor and Seattle City Council have directed SPU to go beyond the regional program and accelerate savings for Seattle customers, with an emphasis on low income. Funding comes 100% from direct service ratepayers (no wholesale customer investment in this program). A portion of the cost of the Conservation Potential Assessment (CPA) was funded from this Seattle-only program.

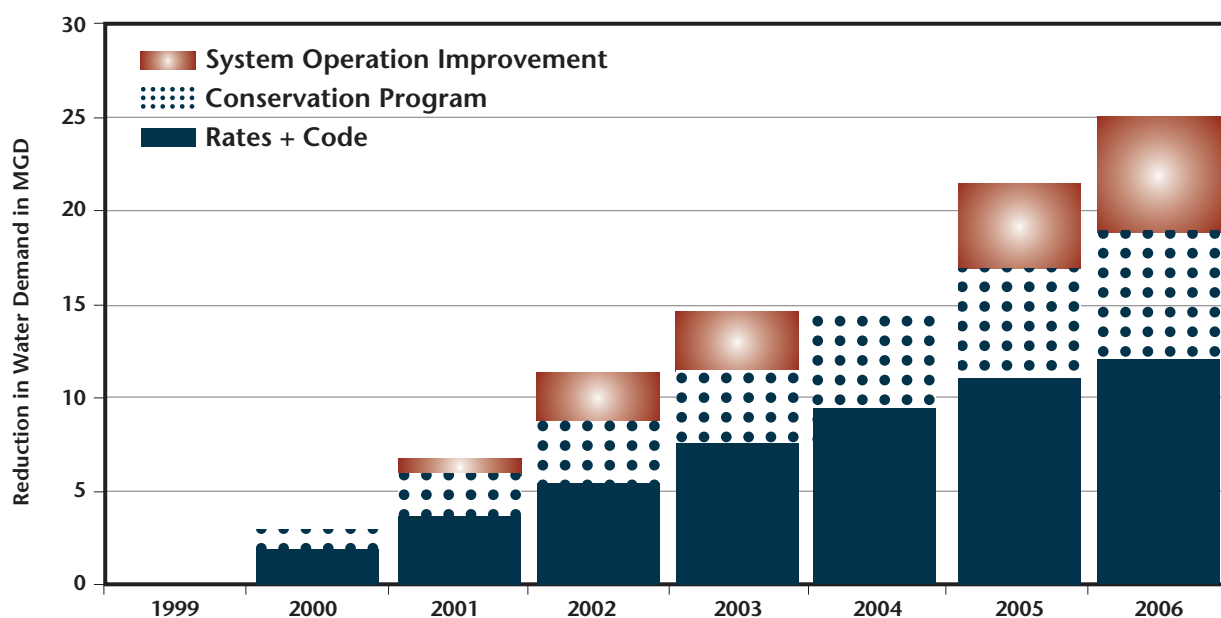
**System Operation Savings** (i.e., a reduction in non-revenue water from the previous year) are obtained from reductions in water used for in-city reservoir cleaning and overflowing, water main and tank flushing, water main leaks, metering inaccuracies, and other actions not related to specific customer demand reduction activities. This water is not being sold to customers, so it is not considered a component of the 1% Program. Non-revenue water fluctuates from year to year, in some years increasing and in others decreasing. Between 1992 and 2004, non-revenue water has shown no obvious trend, varying mostly between 10 and 13 mgd. This has been due primarily to different amounts of water used for reservoir cleaning and overflowing to optimize water quality. However several recent changes have contributed to non-revenue water falling to new lows in 2005 and 2006. As more and more reservoirs are covered, the need for cleaning and overflowing is significantly reduced. In addition, the installation of meters at the outflows of some of the remaining open reservoirs has improved overflow monitoring. As a result, non-revenue water dropped to 7.7 mgd in 2005 and 6.3 mgd in 2006. Estimated system savings for 2006 is 1.4 mgd. ♦

## Cumulative Savings

Chart 3 depicts cumulative water savings. The chart is best used as a picture of historical progress, rather than as an absolute count of cumulative savings. Long-term customer savings, due to conservation programs, higher rates, and the plumbing code (the bottom and second bars) have grown steadily. Customer savings are derived from specific conservation measures and behavior actions. System savings (the third bar)

are reductions in non-revenue water and come from a variety of sources such as reducing leaks and lining/covering reservoirs, improved meter accuracy, and modifications to how water mains and reservoirs are flushed to maintain the highest water quality. With the notable exception of 2004 when more than usual reservoir overflowing occurred, system savings have been steadily accumulating since 2000. 💧

**Chart 3: Cumulative Water Savings<sup>1</sup> Since 1999**



<sup>1</sup>Chart 3 provides historical progress rather than an absolute count of cumulative savings. All program categories are shown as annual average savings.

The savings breakout in Chart 3 was estimated as follows:

1. Rates - price elasticity parameters from SPU's water demand forecast model.
2. Code - natural replacement of plumbing fixtures by customers as forecast in SPU's Conservation Potential Assessment model.
3. Conservation Programs - includes 1% Program and Seattle-only I-63 Settlement Ordinance. See individual program estimates from this report.
4. System Operation - analysis of water system operation use. The level of non-revenue water in the base year has been revised slightly, resulting in a small change in the estimate of cumulative system operation savings compared to previous Annual Reports.

## Progress in Meeting the Regional 1% Goal

Table 3 shows the year-by-year savings targets and actual accomplishments of the Regional 1% Program leading up to the overall program goal in 2010 established in the Ten Year Conservation Program Plan. Note that savings targets and accomplishments are now measured in units of average annual mgd. The 11 mgd of *annual average* cumulative savings for 2010 shown in the table is equivalent to the adjusted 1% Program goal of 14.5 mgd peak season savings.

attributed to each conservation approach. In addition, SPU will be reviewing 2007-2012 budgetary needs for the conservation program based on conservation staff expertise, market research, and analysis from the Conservation Potential Assessment. The SPU program and budget review will be aimed at achieving the conservation targets articulated in the 2007 SPU Water System Plan. ♦

**Table 3: Regional 1% Program Cumulative Savings**

|  | 2000-01<br>"Ramp-Up"<br>2-Year Total | 2002       | 2003       | 2004       | 2005       | 2006       | 2007       | 2008       | 2009       | 2010         |
|--|--------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|
| <b>Actual 1% Savings<br/>Cumulative in MGD</b> | <b>2.1</b>                           | <b>3.1</b> | <b>3.7</b> | <b>4.4</b> | <b>5.3</b> | <b>6.2</b> |            |            |            |              |
| <b>Target 1% Savings<br/>Cumulative in MGD</b> | <b>1.6</b>                           | <b>2.5</b> | <b>3.6</b> | <b>4.5</b> | <b>5.4</b> | <b>6.5</b> | <b>7.7</b> | <b>8.8</b> | <b>9.9</b> | <b>11.0*</b> |

\*Note: Original 1% Program goal was 18 mgd peak season cumulative through year 2010, adjusted to 14.5 mgd peak savings for departure of Cascade utilities from the regional conservation program. In 2005, to be consistent with reporting of code, price, and non-revenue water savings, an annual average savings goal for the 1% Program was adopted. The annual average savings goal is 11.0 mgd, equivalent to the 14.5 mgd peak season goal.

Cumulative savings at the end of 2006 are slightly below target. Actual savings vary by year in relation to the annual target, and some of the savings attributed to price may in fact be behavior savings influenced by 1% customer messaging. Overall progress to date is tracking to reach the 2010 goal.

Future plans to measure progress toward the 2010 goal include analysis of the four components of regional water consumption: conservation programs, the price of water (utility rates), plumbing code and system operation savings. This review may further refine savings



Customer participation in efficient indoor and outdoor water use is saving the region 6.2 mgd to date.

# Chapter 2 Detailed Program Accomplishments

Program savings and accomplishments in 2006 continue to be strong across all customer sectors. In addition, program changes made in a number of areas will strengthen service delivery and conservation savings in 2007. This Chapter provides detailed results of conservation program activity in each major customer sector.

## Highlights:

- The Water Smart Technology program completed dozens of site visits at ethnic businesses, many non-English speaking, to increase water conservation program participation.
- Incentives for new construction projects were developed and offered for the first time in 2006. In addition, a new program targeted the food service sector.
- The WashWise program issued over 7,000 rebates, 1,000 more than in 2005. A consolidated program will be offered jointly by the SWP, Seattle City Light, Puget Sound Energy, and Cascade under a single rebate structure and application form in 2007.
- Efficient irrigation marketing focused on the Seattle Area Watering Index announced daily by Steve Pool from KOMO News 4. Radio and TV ads aired to support these efforts.
- Two new landscape conservation communication avenues were developed: an E-newsletter, Savvy Gardener Connection, and posting customer gardening successes on-line.
- Efforts to promote resource efficient landscapes in new construction yielded a specification for drip irrigation for the Seattle Parks Department to use in small parks.
- A new youth education web page was created that is student-friendly and uses characters from the Waterbusters game.
- The Waterbusters on-line interactive water conservation game was promoted aggressively through youth-oriented TV, resulting in 12,000 visits. ♦

## Commercial, Industrial, and Institutional Highlights (other than landscape)

**Table 4: Commercial Hardware Savings**

| 2006 Commercial Incentives<br>(other than landscape)       | Projects   | Savings<br>(gallons per day) |
|--|------------|------------------------------|
| <b>Restroom Measures</b>                                   | <b>30</b>  | <b>27,380</b>                |
| <b>Greening Ethnic Businesses -<br/>Restroom / Kitchen</b> | <b>38</b>  | <b>7,772</b>                 |
| <b>Refrigeration / Ice / Cooling</b>                       | <b>15</b>  | <b>15,364</b>                |
| <b>Medical Equipment</b>                                   | <b>6</b>   | <b>34,465</b>                |
| <b>Process Water</b>                                       | <b>3</b>   | <b>69,449</b>                |
| <b>Coin Op Washers</b>                                     | <b>5</b>   | <b>2,664</b>                 |
| <b>Kitchen Measures</b>                                    | <b>2</b>   | <b>1,555</b>                 |
| <b>Pre-Rinse Sprayheads</b>                                | <b>23</b>  | <b>1,512</b>                 |
| <b>Other Measures</b>                                      | <b>2</b>   | <b>99,773</b>                |
| <b>Total from Incentive Projects</b>                       | <b>124</b> | <b>259,934</b>               |
| <b>Non-incentive savings</b>                               | <b>4</b>   | <b>22,000</b>                |
| <b>TOTAL</b>   | <b>128</b> | <b>281,934</b>               |

### Water Smart Technology

The Water Smart Technology Program expanded outreach to minority-owned businesses through the Greening Ethnic Businesses initiative in 2006. Historically, few ethnic businesses have taken advantage of conservation program incentives. The Resource Venture's Multicultural Team brought in a significant number of first-time program participants, many non-English speaking, for a total of nearly 8,000 gpd savings. The Resource Venture is a contract service for business customers providing resource conservation expertise. The Resource Venture is partially funded by the 1% Program.

In addition, two new incentive programs encouraged resource conservation in new building construction and food services. Rebates for high efficiency plumbing fixtures and appliances, and \$500 rebates for efficient food steamers, were offered for the first time in 2006.

Free FlushStar® qualified tank-type toilets and rebates were offered to commercial customers in 2006. Due in large part to the Greening Ethnic Business component of the overall outreach effort, participation was at the highest level since the sprayhead replacement program in 2004. Customers continue to overwhelmingly prefer the free toilet option, with only a few customers opting for the standard toilet rebate.

Efforts continued to focus on steam condensate reclaim projects. While several good projects have been studied and determined cost-effective for the customer and the SWP, customers are still reluctant to imple-

ment these complicated projects.

### Looking ahead to 2007

A new brochure will be developed specifically for marketing and outreach to local utility customers of SWP partners. The first condensate reclaim projects are expected to be completed in 2007. New construction incentives will be emphasized, especially focusing on beyond-code high efficiency toilets (HET). The rebate for food steamers will be increased to \$750, in line with partner agencies Puget Sound Energy and Seattle City Light. In addition, a field study will be conducted to confirm urinal water conservation potential. ♦

## Residential Indoor

**Table 5: 2006 Residential Hardware Savings**

| Measure                            | Fixture Targets | Fixtures Completed | Savings (gal./day) |
|------------------------------------|-----------------|--------------------|--------------------|
| <b>Multifamily Toilets</b>         | <b>5,000</b>    | <b>2,271</b>       | <b>57,683</b>      |
| <b>Washing Machines</b>            | <b>5,000</b>    | <b>7,416</b>       | <b>138,679</b>     |
| <b>Multifamily Coin-Op Washers</b> | NA              | 7                  | 210                |
| <b>Non-rebate savings</b>          | NA              | NA                 | <b>14,445</b>      |
| <b>Total Savings</b>               |                 |                    | <b>211,017</b>     |

### WashWise Resource Efficient Clothes Washers

2006 was another banner year for WashWise, with 7,416 WashWise rebates issued. The program has issued 61,850 rebates since its inception in 1997. Program administration was outsourced to streamline rebates for the region on behalf of several water and energy utilities. Partnerships were developed with Seattle City Light, Puget Sound Energy and Cascade Water Alliance to implement a uniform program with one rebate form and consistent rebate levels in 2007, making it much easier for customers and retailers.

### Multifamily Toilet Rebates

Over 2,271 toilets in 101 apartment buildings were upgraded to 1.6 gallons per flush from 3.5 gallons per flush or greater models. Many of the older toilets were leaking or in need of repair. 57,683 gallons per day was saved. Customer feedback continues to be excellent. Most customers participated in the SWP's voluntary toilet recycling as an environmentally responsible way to dispose of their old toilets. Marketing efforts

continued through trade publications and mailings to property managers. In addition, SCL and PSE began promoting the program to multifamily weatherization program applicants. Since the program began in July, 2001, approximately 20% of the potential market has participated. It is becoming more challenging to attract participants. It is likely that future participants have heard about the program but have reservations that are keeping them from participating. Additional marketing efforts targeting property managers will be undertaken in 2007.

### Showerhead Research

During 2006 detailed planning and design of a proposed 2007 Regional Showerhead Program was a high priority. Since showerheads save both water and energy, funding partnerships were explored with energy utilities serving the region (Seattle City Light and Puget Sound Energy) and with Cascade Water Alliance. A showerhead make and model was selected, and in-home pre- and post- showerhead flow and temperature measurements were made with help from local real estate firms. Pilot projects were conducted to test customer response to showerhead distribution methods. The water, gas, and electric savings from the pilots confirmed excellent cost effectiveness of a beyond-code showerhead program.

### Behavior Messaging

A new television ad featuring Bert the Salmon and his sidekick Phil Dumpster doing laundry aired in December, 2005 and March 2006 to increase customer aware-



ness and change behavior around washing full loads of clothes. Using 2005 market research results, a community-based strategy to promote washing full loads of clothes was undertaken in partnership with Soos Creek Water & Sewer and Cedar River Water & Sewer Districts. One utility mailed a flier to their customers, and the other published an article in their newsletter. An article also appeared in a community paper. Staff set up a table at a local shopping center and invited people to fill a front-loading machine and enter a drawing for a free WashWise washer. Customers who entered the drawing were asked to fill out a survey about their laundry habits. One “Green Home Party” took place, to engage small groups of homeowners in hands-on activities such as checking for toilet leaks and finding out what constitutes a full load of wash. Similar group approaches have been shown to lead to durable behavior change. The effort was staff-intensive and participation modest. Promoting washing full

loads and making a washer available at public events such as community festivals will be explored in 2007.

Market research was conducted on fixing toilet leaks, to prepare for an educational campaign in 2007. Promotion of FlushStar® toilets continued, with the listing of the results of toilet performance testing on the SWP website and in-store banners and “cling” stickers indicating which toilets meet the FlushStar® standard.

#### Looking ahead to 2007

A regional WashWise program will be implemented, using one rebate form and one set of rebate levels across SPU, SCL, PSE and Cascade service territories. The Multifamily Toilet Rebate program will continue, with additional marketing to property management firms. The FlushStar® standard and list will be updated. A messaging campaign will be developed to promote FlushStar® toilets and leak identification and repair. ♦

## 2006 Residential and Commercial Landscape Highlights

**Table 6: Landscape Customer Outreach**

| Outreach Contact Type                                     | Outreach Target | Actual Outreach |
|---|-----------------|-----------------|
| Naturals Guides, Plant List and Soaker Hose Fact Sheet    | 80,000          | 78,000          |
| Savvy Gardener Connection Subscribers                     | 600             | 1,100           |
| Savvy Gardener Class Attendance                           | 350             | 384             |
| Professional Trainings                                    | 500             | 2,015           |
| Lawn & Garden Hotline Questions                           | 9,000           | 6,675           |
| Earned Media Spots  | 15              | 11              |
| NW Natural Yard Days (Number of Discounted Products Sold) | 200,000         | 218,000         |

**Table 7: Landscape Rebates**

| Landscape Rebates                  | Number of Customers | Savings in gallons/day |
|------------------------------------|---------------------|------------------------|
| Single Family Homes                | 158                 | 7,923                  |
| Commercial (Including Multifamily) | 19                  | 30,063                 |

#### Publications

Smart Watering, one of the Natural Lawn & Garden Guides, was reprinted due to strong demand in the warm and dry summer. The process of revising and expanding the popular Plant List was also begun.

#### E-newsletter: Savvy Gardener Connection

In 2006, the Savvy Gardener name was extended to a new e-newsletter that targets gardening customers. The goals of this outreach tool are to offer seasonal advice, promote classes and rebates, highlight the Natural Lawn & Garden guides, provide inspiration for changing the way people garden and stay connected with customers who attend SWP classes. The first newsletter was sent out in July, to 330 subscribers. By the end of the year, over 1,100 people had signed up. This electronic form of communication allows for more immediate and less costly ways of connecting with customers.

#### Gardening Stories to Inspire Change

Also new this year, SWP asked gardeners to send in their “gardening success stories.” To date, three gardeners have been selected to be highlighted on savingwater.org. The stories will include photos, lessons learned, tips for fellow gardeners and plant lists.

As these stories are posted to the web, SWP will continue to add new stories from around the service area.

### **Savvy Gardener Classes**

These classes are designed to help beginning and advanced gardeners understand how to create gardens that use less water, yet provide the beauty they seek in their home landscapes. Nine spring classes were conducted throughout the service area, ranging in attendance from a low of 9 to a high of 85. Five fall classes ranged from 12 to 90 attendees. In 2007, staff will focus on a smaller number of nurseries who each year bring in large crowds for their classes. A small number of classes will also continue in designers' gardens. Evaluations and sign ups show these are the most popular classes, however they are limited to smaller groups given the smaller spaces of gardens. Sponsoring nursery classes also serves SWP in forming partnerships with nurseries that are among the most influential sources of information with gardening customers.

### **Professional Training in Natural Landscaping**

SPU's county-wide professional training (funded by SPU drainage and solid waste funds, and the Local Hazardous Waste Management Program in King County) also promoted water-efficient landscape design and installation. In 2006, professional training focused primarily on proper soil preparation and soil maintenance, in synergy with new State Department of Ecology stormwater regulations that require minimum soil standards for new and re-development. Some classes focused generally on Natural Landscape Design principles (again including water-efficient practices).

Classes, seminars, and field trainings reached a variety of professional audiences, including landscape architects, architects, developers, planners, engineers, builders, project managers, grading contractors, realtors, landscape installation and maintenance contractors, and students preparing to enter these professions.

- In 2005, 1,580 professionals participated at a total of 24 training events.
- In 2006, 2,015 professionals participated in a total of 29 training events.

### **Media Messaging**

The water shortage of early 2005 drew the media's attention to water consumption in gardens and solutions to reducing that consumption. However, with the improved water supply in 2006, the media did not emphasize water conservation. Articles that did cover water conservation appeared in the Seattle P.I. and Seattle Times as well as one radio show, totaling 11 media spots. This does not include media coverage in smaller more local media sources.

### **Natural Lawn and Garden Hotline**

The regional Hotline continues to be a resource for customers with questions about water efficiency, planting choices, and other natural yard care issues. The Hotline is jointly funded by the SWP, SPU solid waste funds, and the King County Local hazardous Waste Management Program. In 2006, the Hotline answered 5,646 calls, down from 8,550 in 2005. Hotline staff answered 2,884 questions from the "Resource Management" line and 3,791 from the "Integrated Pest Management" line.

### **Landscape Plans and Design**

The SWP is pursuing opportunities to promote resource efficient landscapes in new construction. Examples include Ashworth Cottages housing, a LEED project, and the Pinehurst Pocket Park. The Pinehurst Pocket Park developed specifications for drip irrigation. These specifications provided the basis for a new irrigation specification for the Seattle Parks Department and others to use in similar small parks.

### **Northwest Natural Yard Days**

Funded by the SWP, SPU solid waste funds, King County and suburban cities, the spring and fall promotions of mulching lawn mowers and other natural yard care products at regional retailers encouraged outdoor water efficiency. Sales of products that improve water efficiency, such as soaker hoses, bagged compost, water wands and bark mulch, increased significantly compared to 2005.

### **Looking ahead to 2007**

The SWP will review existing watering messages with input from focus groups and the results of the regional benchmarking survey. In coordination with other partners, such as retail nurseries, these messages will

be revised and more actively promoted, culminating in revising the Smart Watering Guide in time for the next reprint. In addition, discussions with nurseries have led to the concept of developing a multi-year program that actively encourages proper plant selection through plant discounts, advertising and education.

#### **Water Efficient Irrigation Program And Rebates**

Irrigation related program initiatives included rebates for irrigation system upgrades, free on-line tools to assist with more efficient scheduling, training for irrigation contractors and vendor fairs promoting water efficient technologies.

In 2006, irrigation efficiency rebates for a variety of technologies were standardized to make the rebate program simpler for and more accessible to customers. Marketing and communications included the Seattle Area Watering Index. Steve Pool from KOMO News 4 agreed to announce the Index daily on the 4 PM Weather Report as a public service to Seattle area residents. Radio and television ads were developed to show customers how to use the index and other tips about outdoor water conservation.

The SWP co-sponsored a week-long contractor training and vendor fair in December to improve knowledge of water conservation among irrigation contractors. The training included three water conservation-related classes. The vendor fair was an opportunity for Seattle-area contractors to meet vendors and distributors and learn more about the efficiency technologies that qualify for rebates.

SWP worked with the Seattle Parks and Recreation Department (SPR) to help SPR fully implement an irrigation system management tool that has the poten-

tial to save almost 22.5 million gallons of water per year (more than 61,000 gpd). Maxicom, a complex computer program that allows for close monitoring of multiple irrigation systems from a single computer, was installed at three Parks locations several years ago. With assistance from the SWP, SPR brought 55 parks onto the Maxicom system, trained over 20 Parks employees to use the system, and had a Parks employee coordinate the trainings and Maxicom utilization process for three months.

Work continues with Seattle Parks and Recreation Premier Golf Centers to complete a conservation project on their four courses. The City of Woodinville Parks department has nearly completed a project on Wilmont Gateway Park and City Hall, and Seattle Public Schools are nearing completion on projects as well.

#### **Looking ahead to 2007**

In 2007, the Water-Efficient Irrigation Program will continue to support the Watering Index campaign, and will expand the campaign to include messaging about proper scheduling. To help rebated customers make the most of their new conservation controllers, SWP will also distribute brief, laminated "conservation cards" illustrating the controller's key water-saving features.

The program will continue to promote "smart" irrigation controllers and the SWP rebates through a direct mail campaign to customers and contractors. The outreach materials will be developed in conjunction with the Smart Water Application Technology (SWAT) campaign, a national educational and technology testing effort aimed at increasing the market share of water-efficient irrigation technologies. ♦

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## **General Customer Outreach and Messaging**

The 1% Program continued to succeed in motivating customers to conserve by focusing on specific measures and programs. Customers were directed to the [www.savingwater.org](http://www.savingwater.org) site by a wide variety of program messages, including newsletters, bill messages, media spots, brochures, and presentations. A special effort was made to encourage media coverage of the residential indoor and landscape conservation measures.

Leveraging "earned" media with a small amount of paid ads also proved to be an effective tool to broaden customer outreach and messaging.

In partnership with KOMO TV and Radio and popular weatherman Steve Pool, a weekly index for landscape watering was promoted. This encouraged customers to base their irrigation on actual weather conditions. In

addition to this index information, conservation tips were provided throughout the irrigation season.

Partnerships with the garden centers, plumbing and home improvement outlets, and major appliance dealers was another key outreach strategy. Many customers rely on and prefer to get water efficiency information from these trusted sources. Using popular local celebrities like weather announcers and garden show hosts and garden writers to help spread the conservation message further increased customer participation.

SPU and the SWP are both members and major contributors to the Partnership for Water Conservation,

a non-profit organization of utilities, environmental organizations and businesses that encourage water conservation in the Puget Sound Region. In 2006, the partnership began development of a bus sign awareness campaign about water conservation to be implemented in 2007.

#### Looking ahead to 2007

More emphasis will be given in 2007 to web sites, newsletters, industry and agency partnerships and earned media as more and more customers prefer to obtain their conservation information from these sources. ♦

## Youth Education

**Table 8: 2006 Youth Education Performance**

| Activity                   | Outreach Target | Actual Outreach |
|----------------------------|-----------------|-----------------|
| Conservation Kits          | 1,000           | 1,200           |
| Posters Distributed        | 200             | 200             |
| Water Timers Distributed   | 800             | 1000            |
| Activity Books Distributed | 800             | 1,200           |
| WaterBusters Game Hits     | 10,000          | 12,000          |

Efforts continued in 2006 to bolster the on-line presence of regional youth water education. This medium has proven to be successful in reaching youth. The increasing pressure for schools to meet State education standards has greatly limited more traditional classroom visit opportunities. A new web page was created and brought on-line. The new page features characters from the Waterbusters game introducing water conservation information to K-12 grade levels. The revised version of the popular Waterbusters home conservation game was promoted through television during peak summer and early fall water use months on KTWB 22 and Q13 Fox and resulted in more than 12,000 web site visits. Sponsorship and staffing of three regional water festival events drew more than 2,500 K-6 youth. This included the second annual Water Fest at the Cedar River Watershed, where the star of the show again was Bert the Salmon. 1,000 five-minute water timers and 1,200 home water conservation kits were distributed as part of these festivals and at other public events.

#### Looking Ahead to 2007

The primary activity in the year ahead will be to assess the effectiveness of the two key elements of the youth education program. These include giveaway items such as shower timers and Home Water Conservation Kits, and the newly revised youth education web site. Studies will be done to determine to what degree these are conveying conservation messages and providing incentives for behavior change.

Sponsorship of and participation in water festivals and events will continue as these have been an important means of conveying the SWP conservation message. Promotional and giveaway items including timers, kits, bookmarks, activity booklets and posters will continue to be available for distribution to SWP partners.



A new web page speaks to kids at their grade level.

## Evaluation and Monitoring

Updating the 1998 Conservation Potential Assessment (CPA) was completed in 2006. The new conservation measure library includes analysis of over 135 conservation measures, 65 more than analyzed in the 1998 CPA. The final report includes efficiencies expected from the State Building Code relative to plumbing fixtures. It also ranks conservation measures according to the marginal cost of water savings. The updated CPA will provide the analytical framework for regional conservation program planning and design for 2006 forward. The 2006 CPA also calculates other benefits obtained by conservation measures including savings from reductions in demand for electricity, storm water and wastewater.

Customer survey fielding was completed on the 2006 regional conservation benchmark research, the first

since 2001. More than 1,100 customers from Seattle and wholesale service areas were surveyed. At year's end, analysis was underway, with results expected in the first quarter of 2007. The survey contains a new element that will enable the SWP for the first time to analyze customer water consumption in relation to attitudes, behaviors and participation in SWP programs.

The 2005 annual accomplishments report was issued.

### Looking ahead to 2007

Analysis of the regional benchmark survey will be completed and the results will be used to begin adjusting program strategies. The 1% Program's billing attribution analysis will also be completed as a pioneering effort to correlate conservation behavior change programs with customer consumption. ♦

## Acknowledgements



City of Seattle

Gregory J. Nickels, Mayor

### Seattle Public Utilities:

Chuck Clarke, Director, Seattle Public Utilities

Sharon White, Assistant Director, Seattle Public Utilities

Lael Hoppler, Deputy Director, Customer Service Branch

Lisa Espinosa, Director, Customer Programs and Contracts Management Division

Julie Burman, Water Conservation Specifier

Richard Gustav, Resource Conservation Manager

Al Dietemann, Water Conservation Program Lead

### Seattle Public Utilities Staff Contributors:

Allegra Abramo David McDonald

Jason Argo Mike Mercer

David Broustis Philip Paschke

Liz Fikejs Tracey Rowland

Billie Fisher Donald Saito

Bruce Flory Jenna Smith

Arece Hampton Brett Stav

Mialee Jose Donella Turner

Nota Lucas Carl Woestwin

### Seattle Water System Wholesale Customer Conservation Technical Forum

Debbie Rannfeldt, Chair, Woodinville Water District

Sean Vance, Cedar River Water & Sewer District

Barbara Petersen, Coal Creek Utility District

Greg Wilson, Highline Water District

Carl Lunak, Northshore Water District

Bob Heivilin, Shoreline Water District

Marci Oda, Soos Creek Water & Sewer District

Glen Boettcher, City of Mercer Island

Michael Harris, WD 49

Dick Swaab, WD 20

Tom Hoffman WD 90

For more information:

[www.savingwater.org](http://www.savingwater.org)

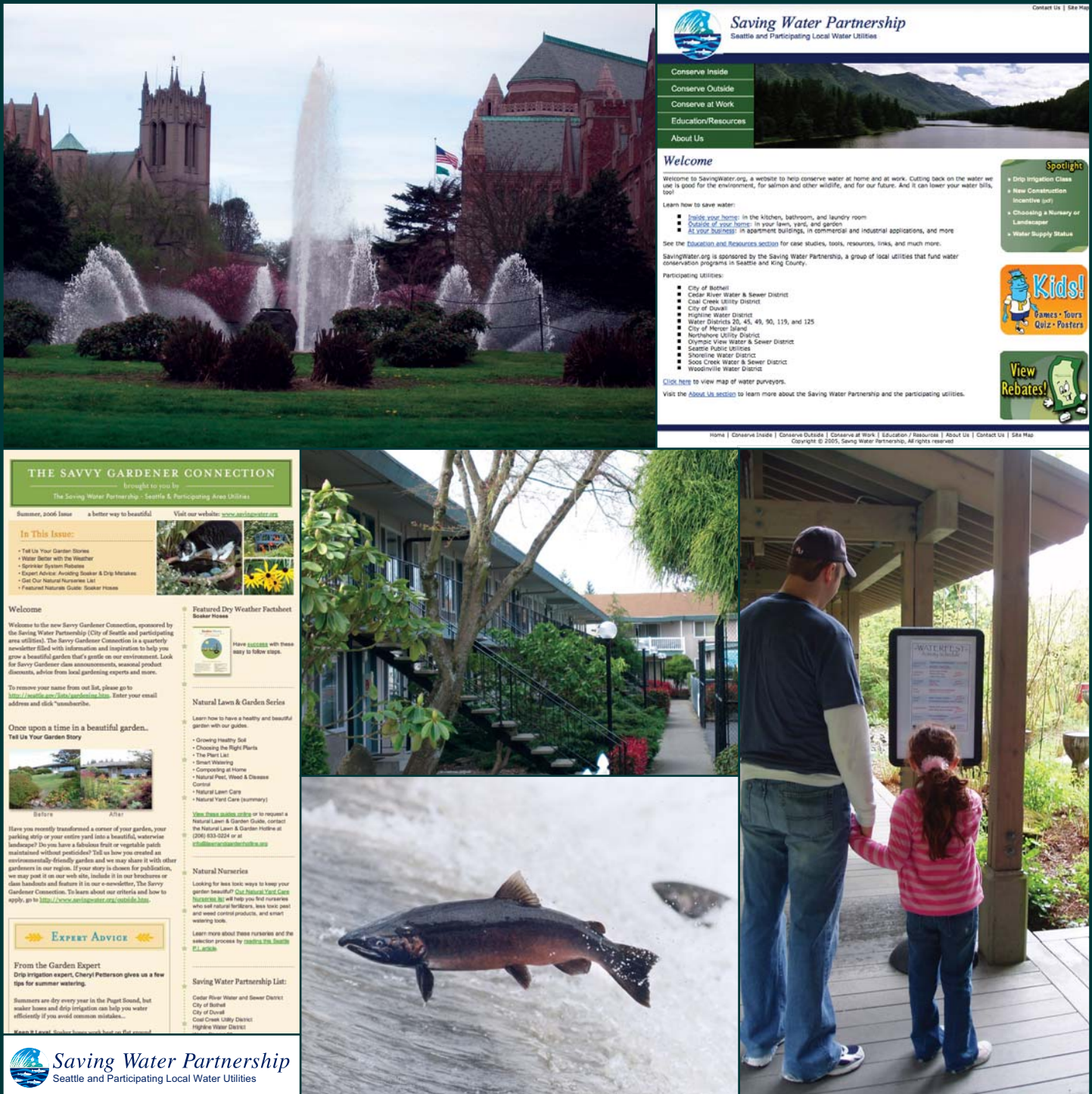
(206) 684-SAVE

Natural Lawn & Garden Hotline (206) 633-0224

For TTY assistance please call (206) 233-7241. This information can be made available on request to accommodate people with disabilities and those who need language assistance.



## 2006 Programs and Accomplishments



Photographs above: Efficiency improvements to the Drumheller Fountain at the University of Washington are saving nearly 100,000 gallons per day. The Savingwater.org home page invites customers to save water. The new Savvy Gardener Connection e-newsletter grew from 300 to 1,100 subscribers. El Toro Apartments in Highline Water District replaced 63 toilets - The manager and residents are thrilled with the savings and performance. A family takes in information at the Cedar River Watershed Festival. Salmon are among the beneficiaries of SWP conservation efforts.



*Circle of Life by Susan A. Point*

**Saving Water Partnership:**

Cedar River Water & Sewer District  
City of Bothell  
City of Duvall  
City of Mercer Island  
Coal Creek Utility District  
Highline Water District  
Northshore Utility District  
Olympic View Water & Sewer District  
Seattle Public Utilities  
Shoreline Water District  
Soos Creek Water & Sewer District  
Water District Number 20  
Water District Number 45  
Water District Number 49  
Water District Number 90  
Water District Number 119  
Water District Number 125  
Woodinville Water District

Report prepared by:  
Seattle Public Utilities  
Resource Conservation Office  
For more information contact:  
Seattle Public Utilities  
Seattle Municipal Tower  
700 5th Avenue, Suite 4900  
P.O. Box 34018  
Seattle, WA 98124-4018  
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